



# Milk thistle

## Overview

Milk thistle (*Silybum marianum*) has been used for 2,000 years as an herbal remedy for a variety of ailments, particularly liver, kidney, and gall bladder problems. Several scientific studies suggest that substances in milk thistle (especially a flavonoid called silymarin) protect the liver from toxins, including certain drugs such as acetaminophen (Tylenol), which can cause liver damage in high doses. Silymarin has antioxidant and anti-inflammatory properties, and it may help the liver repair itself by growing new cells.

Although a number of animal studies demonstrate that milk thistle can be helpful in protecting the liver, results in human studies are mixed.

### Liver disease from alcohol

Milk thistle is often suggested as a treatment for alcoholic hepatitis and alcoholic cirrhosis. But scientific studies show mixed results. Most studies show milk thistle improves liver function and increases survival in people with cirrhosis or chronic hepatitis. But problems in the design of the studies (such as small numbers of participants and differences in dosing and duration of milk thistle therapy) make it hard to draw any real conclusions.

### Viral hepatitis

Milk thistle is widely used in the treatment of viral hepatitis (particularly hepatitis C). However, studies show mixed results. Some found improvements in liver function, while others did not. In one study of 16 patients who didn't respond to interferon and ribavirin therapy, milk thistle significantly reduced the viral load of hepatitis C. In 7 of the subjects the virus decreased to undetectable levels after 14 days of therapy.

### Mushroom poisoning

Based on traditional use, milk thistle has been used as an emergency antidote to poisoning by deathcap mushroom (*Amanita phalloides*). Animal studies have found that milk thistle extract completely counteracts the toxic effects of the mushroom when given within 10 minutes of ingestion. If given within 24 hours, it significantly reduces the risk of liver damage and death.

### Cancer

Early laboratory studies also suggest that silymarin and other active substances in milk thistle may have anticancer effects. These substances appear to stop cancer cells from dividing and reproducing, shorten their lifespan, and reduce blood supply to tumors. Some studies suggest silymarin may favorably supplement sunscreen protection and may help reduce the risk of skin cancer. More studies are needed,

however, to show whether milk thistle has any effects in the body (not just in test tubes).

## Plant Description

Milk thistle is native to the Mediterranean region. It is now found throughout the world. This stout thistle usually grows in dry, sunny areas. The spiny stems branch at the top, and reach a height of 5 - 10 feet. The leaves are wide, with white blotches or veins. Milk thistle gets its name from the milky white sap that comes from the leaves when they are crushed. The flowers are red purple. The small, hard skinned fruit is brown, spotted, and shiny. Milk thistle spreads quickly (it is considered a weed in some parts of the world), and it matures quickly, in less than a year.

## What's It Made Of?

The active ingredient -- the one that protects the liver -- in milk thistle is known as silymarin, a chemical extracted from the seeds. Silymarin is actually a group of flavonoids (silibinin, silidianin, and silicristin), which are thought to help repair liver cells damaged by alcohol and other toxic substances. Silymarin also keeps new liver cells from being destroyed by these same toxins. It reduces inflammation (which is why it is often suggested for people with liver inflammation or hepatitis) and is a strong antioxidant.

Most milk thistle products are standardized preparations made from the seeds of the plant. Most preparations are standardized to contain 70 - 80% of silymarin.

## Available Forms

- Capsules of standardized dried herb (each capsule contains about 120 - 140 mg silymarin)
- Liquid extract
- Tincture
- Silymarin phosphatidylcholine complex

A few studies show that a silymarin-phosphatidylcholine complex may be absorbed more easily than regular standardized milk thistle. Phosphatidylcholine is a key element in cell membranes. It helps silymarin attach easily to cell membranes, which may keep toxins from getting inside liver cells. People who have alcohol-related liver disease should avoid alcohol extracts.

## How to Take It

### Pediatric

There are no studies showing whether it is safe to give milk thistle to a child. Liver problems can be serious and should be diagnosed by a physician. Talk to your child's health care provider before giving milk thistle to a child.

### Adult

If you think you have a liver problem, you should see a health care provider. Liver disease can be life threatening.

## Precautions

The use of herbs is a time honored approach to strengthening the body and treating disease. Herbs, however, can trigger side effects and can interact with other herbs, supplements, or medications. For these reasons, you should take herbs with care, under the supervision of a health care practitioner.

Milk thistle is generally regarded as safe. Side effects are usually mild and may involve stomach upset and diarrhea. Some people may get a rash from touching milk thistle plants.

Milk thistle should not be used by pregnant or breastfeeding women.

People with a history of hormone related cancers, including breast, uterine, and prostate cancer, should not take milk thistle.

Do not take milk thistle if you are allergic to ragweed, chrysanthemums, marigolds, chamomile, yarrow, or daisies.

## Possible Interactions

If you are being treated with any of the following medications, you should not use milk thistle without first talking to your health care provider.

- **Antipsychotics** -- includes butyrophenones (such as haloperidol) and phenothiazines (such as chlorpromazine, fluphenazine, and promethazine)
- **Phenytoin(Dilantin)** -- a medication used for seizures
- **Halothane** -- a medication used during general anesthesia
- **Birth control pills or hormone replacement therapy**

Milk thistle may interfere with the following medications, because both milk thistle and these medications are broken down by the same liver enzymes:

- **Allergy drugs** -- such as fexofenadine (Allegra)
- **Drugs for high cholesterol** -- including statins such as lovastatin (Mevacor, Altacor)
- **Antianxiety drugs** -- including alprazolam (Xanax), diazepam (Valium), and lorazepam (Ativan)
- **Antiplatelet and anticoagulant drugs (blood thinners)** -- including clopidogrel (Plavix) and warfarin (Coumadin)
- **Some cancer drugs**
- **Drugs broken down by the liver** -- because milk thistle works on the liver, it may affect drugs broken down by the liver, of which there are many. Speak with your health care provider.

## Supporting Research

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## Alternative Names

*Silybum marianum*; St. Mary's thistle



## Version Info

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